

The screenshot shows the top navigation bar of the Discovery.com website. The 'Our Networks' menu is expanded, displaying links to 'TV', 'Animal Planet', 'Science Channel', 'Military Channel', and 'Discovery Channel'. Below the navigation bar, there is a search bar with the placeholder text 'What to Watch' and a 'SEARCH' button. A 'Shop Discovery Store' button is also visible, along with a 'GO NOW' link and a 'SHOP NOW' button.

- TV SHOWS ▾
  - TV SCHEDULES ▾
  - NEWS ▾
    - o [Jiska Week](#)
  - VIDEO ▾
    - o [Peridin](#)
  - GAMES ▾
    - o [MarsLab](#)
  - EXPLORE BY SUBJECT ▾
  - NEWSLETTERS ▾
  - SHOP ▾
    - o [Shopping](#)
    - o [Featured in](#)
    - o [Casualty Training](#)
    - o [Dance Inbs](#)
    - o [Dance Pipes](#)
    - o [Danceology](#)
    - o [Dance Club](#)
    - o [Dance Masters](#)
    - o [Dance Party](#)
    - o [Dance Workshop](#)
    - o [Danceology e-mail](#) [share bookmark](#) [print](#)
    - o [Danceads](#)
    - o [Dance Wars](#)
- me and email address, your name and email address, [Dance](#) and a message. Then click "submit."

# Sugar-Coated Nanoparticles Find Hidden Tumors

Eric Bland, Discovery News

To email this article, type in your friend's name and email address, your name and email address, and a message. Then click "submit."

Friend's name:	<input type="text"/>
Friend's email:	<input type="text"/>
Your name:	<input type="text"/>
Your email:	<input type="text"/>
Optional Message:	<input type="text"/>

advertisement

Nanotechnology offers potential for detecting and treating cancer without altering healthy cells. It means targeted death for cancerous tumors without the negative side effects of conventional therapies. We'll take a look at some of these methods and also explore the risks and promise of this new scientific field.

**Message Sent!**  
[close](#)

[Yahoo! Buzz](#)  
[del.icio.us](#)  
[Digg](#)  
[Mixx](#)  
[MySpace](#)  
[Newsvine](#)  
[Reddit](#)  
[close](#)

**Top 10: Ways Nanotechnology Battles Cancer**  
Doctors and scientists are turning to a new set of tools to battle cancer. The tools come from the field of nanotechnology, where parts are so small you can't see them.

### se Puzzle: Nanotech Attacks Cancer

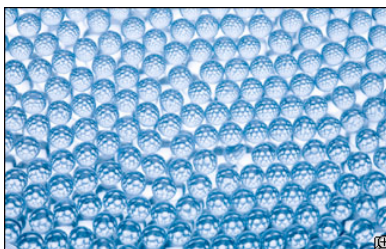
Cancer-fighting nanoparticles find and attack tumors and some therapies may even one day eliminate chemotherapy.

**IM Interview:** [Nano Swat Teams Kill Cancer](#)

Tracy Staedter chats with Geoffrey von Maltzall who builds networks of artificial nanoparticles to communicate with each other to find cancer cells and destroy them.

### My Take: [Nanotech Tests, Not All the Same](#)

Nanoparticles include a diverse family of molecular entities, which differ significantly in their properties. For this reason, each nanoparticle



Nano-Magic | [Discovery News Video](#)

**March 30, 2009** -- Nanoparticles that first illuminate, and could then destroy hidden tumors have been created by scientists at the University of California, San Diego.

should be considered on a case-by-case basis, argues a nanotech specialist.

If approved for clinical use, the new technique could improve the odds of survival for [cancer](#) patients by letting doctors diagnose and treat cancer earlier. It would also, in theory, minimize the toxic side effects associated with traditional chemotherapy.

"The advantage is that if the nanostructure localizes [near the tumor], it gives you an improved ability to see or treat the tumor," said Michael Sailor, a scientist at the University of California, San Diego, who detailed the research in a recent issue of *Nature Materials*.

The drawback to most techniques for finding and treating cancer is toxicity. The same radioactive cadmium that accumulates inside tumors and shines light that MRI machines can detect also destroys various internal organs. [Chemotherapy drugs](#) such as abraxane destroy tumor cells but also kill plenty of healthy cells.

#### Related Content:

- 
- [Gold Nanoparticles Resurrect Failed HIV Drug](#)
  - [Get the Wide Angle on Nanotech and Cancer at Discovery Tech](#)
  - [HowStuffWorks.com: Nanotechnology and Cancer](#)
  - [More Discovery News](#)
- 

Scientists started with thin silicon wafers, similar to those used in the semiconductor industry, and broke them into nano-sized pieces using ultrasound. To treat cancer, the particles would soak up whatever cancer drug would work best in a given case. The scientists then coat the particles in a thin layer of dextrose, a form of sugar.

The end result, according to Sailor, are cancer-killing pastries. "They're like little jelly donuts, rolled in chocolate to seal everything in," said Sailor.

Once the poisonous particles are injected into the bloodstream, they travel around the body.

Tumors need a lot of blood to grow quickly, but they are not good plumbers. The blood vessels surrounding the tumors are thin and full of holes. Those holes are typically just over 100 nanometers in size, just big enough for the 100-nanometer nanoparticles to slip through and get stuck inside the tumor itself.

The particles, made of non-toxic silicon instead of traditional toxic [cadmium](#), glow under ultraviolet light. After about an hour of circulating through the body enough of them have physically lodged themselves near the tumor to be detected by an MRI machine, helping doctors pinpoint the location.

[Next »](#)21« [Previous](#)

- [New Cancer Treatments](#)  
Discover The 12 Most Effective Cancer Treatments In Existence!  
[Ultimate-Cancer-Breakthroughs.com](#)
- [Don't Pay for a Face Lift](#)  
I Cured My Wrinkles Miraculously, Thanks to an Intense 2 Step Secret!  
[RevolutionHealth.com](#)
- [Oncology Therapies Vista](#)  
The most experienced physicians and most advanced radiation treatments  
[www.onctherapies.com](#)
- [Lung Cancer Pictures](#)  
Find the Info and Pictures You Need on Lung Cancer Right Here.  
[OnlineRxMedsGuide.info](#)



SITE SEARCH

SEARCH

SUBSCRIBE TO OUR [NEWSLETTERS](#)

CREDITSiStockPhoto |

DISCOVERY SITES [Discovery Channel](#) / [TLC](#) / [Animal Planet](#) / [Discovery Health](#) / [Science Channel](#) / [Planet Green](#) / [Discovery Kids](#) / [Military Channel](#) / [Investigation Discovery](#) / [HD Theater](#) / [Turbo](#) / [FitTV](#) / [HowStuffWorks](#) / [TreeHugger](#) / [Petfinder](#) / [PetVideo](#) / [Discovery Education](#)

VIDEO [Discovery Channel Video Player](#)

SHOP [Toys](#) / [Games](#) / [Telescopes](#) / [DVD Sets](#) / [Planet Earth DVD Sets](#) / [Gift Ideas](#)

CUSTOMER SERVICE [Viewer Relations](#) / [Free Newsletters](#) / [RSS](#) / [Sitemap](#)

CORPORATE [Discovery Communications, Inc.](#) / [Advertising](#) / [Careers @ Discovery](#) / [Privacy Policy](#) / [Visitor Agreement](#)

ATTENTION! We recently updated our privacy policy. The changes are effective as of Tuesday, October 30, 2008. To see the new policy, [click here](#). Questions? See the policy for the contact information.

Copyright © 2009 Discovery Communications, LLC. The number-one nonfiction media company.